



Amendments to the Specification:

Page 15, amend the paragraph beginning on line 19 to read as follows.

The light emission intensity of a given one wavelength contained in the wavelength group  $\lambda_2$  retrieved by the light detector 24\_11, on the other hand, is converted into a voltage signal from a current detection signal corresponding to the light emission intensity thereof. A signal of a plurality of specific wavelengths output as a sampling signal from the spectrometer 11 is stored as a time series data  $y'ij$  in a storage unit such as a RAM. Next, this time series data  $y'ij$  is smoothed by the first digital filter circuit 22, and stored as a smoothed time series data  $Y'ij$  in a storage unit such as a RAM. Based on the smoothed time series data  $Y'ij$ , the time series data  $d'ij$  of the differential coefficient value (first or second differential value) is calculated by the differentiator 23 and stored in a storage unit such as a RAM. The differential coefficient time series data  $d'ij$  is smoothed by the second digital filter circuit 24, and stored as a smoothed differential coefficient time series data  $D'ij$  in a storage unit such as a RAM. From this smoothed differential coefficient time series data  $D'ij$ , a real pattern of the differential value of the interference light intensity of each wavelength is determined.

Page 23, amend the paragraph beginning on line 21 to read as follows.

According to this embodiment, the semiconductor production apparatus acquires in step 800\_400 the conditions for etching the polysilicon film providing the member to be processed 40. In this step, the information may be received from the data base of the processing conditions stored or recorded in a storage unit or a recording unit in advance, or the information may be received which is input by an input device such as a keyboard or a mouse of the display 17 by the user. As another alternative, the data indicating the film configuration recorded in the wafer 4 or the cassette accommodating the semiconductor wafer 4 in advance may be acquired and detected by an operating unit or the like not shown.